NOVEMBER • 1980

FARM CHEMICALS

Space Age Technology Is Revolutionizing Application

NAAA · NFSA -- December 1-4, Las Vegas, NV

BEST AVAILABLE COPY

Richard T. Meister
President and Editorial Director
Gordon L. Berg
Editor
Charlotte Sine
Managing Editor
Sophie Meister
Associate Editor
Shirley I. Hensley
Jeffrey L. Sheasley
Patricia M. Sobota
Assistant Editors
Lewis B. Nelson
Harold H. Shepard
Consulting Editors
Harold Rogers
Western Editor
Sausalito, CA 94965
Eleanor D. Weil
Art Director
Albert Zilonziger
Executive Vice-President, Director of Advertising
Glenn F. Schwaller
Marketing Manager
Caryn G. Gural
Production Manager
Carol Madison
Production Assistant
Phillip E. Jeanot
Circulation Manager

ADVERTISING OFFICES
Chicago, IL 60630
Wayne P. Larsen
5320 West Lawrence
312-282-0909
Memphis, TN 38117
James M. Wolf
4646 Poplar Ave. #320
901-761-9333
Closter, NJ 07624
Galen B. Smith
317 Harrington Ave.
201-768-1164
Sausalito, CA 94965
Gary T. Fitzgerald
300 Valley St., Suite 302
415-332-5006

VBPA **MEMBER BUSINESS PUBLICATIONS AUDIT**

The national business magazine for the fertilizer and pesticide industries, FARM CHEMICALS serves primarily manufacturers, formulators, mixers, dealers, and commercial applicators of fertilizers and pesticides, reaching those persons responsible for management, marketing, and production. Subscription rates are: in the U.S., its possessions; $16.00; in other countries, $20.00. Established in 1894 as THE AMERICAN FERTILIZER and incorporating CROPLIFE and AG CHEM & COMMERCIAL FERTILIZER.

Farm Chemicals (USPS 995-020)

Publisned monthly by
Meister Publishing Co.
37841 Euclid Avenue
Willoughby, Ohio 44094
216-942-2000

Controlled circulation postage paid at New Richmond, Wis.

Postmaster: Please send change of address "Form 3579" to FARM CHEMICALS, Willoughby, Ohio 44094.

FARM CHEMICALS

Vol. 143 No. 11 November 1980

CROPLIFE and AG CHEM & COMMERCIAL FERTILIZER

13 "There'll Be a Hot Time in the Ole Town . . ."
14 Here Today . . . Coming Tomorrow
26 From Wind Tunnel to Wing Tip
39 "Mr. Fluid Fertilizer" *Lewis B. Nelson*
44 Aerial Application and Agriculture
A Positive Perspective *Don L. Stroud*
50 Quit the Guessing Game! *George S. Sanders*
80 Don't Look Just At Short-Term Demand
84 TVA Unveils Coal Gasification Plant
92 "A New Kind of Commitment"

AG CHEM DEALER/APPLICATOR

47 We Gather Together
56 Do You Really Know Your Fertilizers?
Part Three *J. J. Morvedt*
63 Dealer Image
66 Expo Wows 'Em
98 Accused and Abused

DEPARTMENTS

6 Calendar of Coming Events
10 Government and Your Business
78 Letters to the Editor
100 Book Reviews
105 Introducing the Profit Boosters
116 Presstime News Report
118 What's Doing in the Industry
123 People
124 FC Executive Suite
126 Meetings and Associations
134 Editorial: "You Can't See the Forest for the Disease . . ."

THE COVER STORY

When NAAA and NFSA get together for their conventions this December, there will be a wealth of idea-sharing going on. Starting on page 13, FC looks at some of those ideas on improving application techniques that will be "talked-about" and "looked-at" during the convention, and perhaps incorporated into many applicator's operation over the next few years.

Quit the Guessing Game!

With programmable calculators or pocket computers you can easily—and accurately—figure the price, cost, and profit on each application you make.

By GEORGE S. SANDERS

```
AIR/SURFACE JOB ANALYSIS


OPERATOR INPUT
VEH COST=80.00$/HR
SWATH WIDTH=60. FT.
APP SPEED=15. MPH
FERRY SPEED=25. MPH
TURN TIME=5. SEC
LOAD TIME=12.0 MIN
HOPPER LOAD=1,200.
BASE TO LOAD=10.0 MI
LOAD TO FIELD=0.5 MI
APPLY 40.00/ACRE
COVER 160. ACRES
RUN LENGTH=0.50 MI
PRICE=$2.35/ACRE
END


COMPUTER OUTPUT
UNIT COST=$1.88/ACRE
JOB LOADS=5.50
JOB RUNS=44.00
WORK RATE=42.5 AC/HR
JOB TIME=226.07 MIN
JOB PRICE=$376.00
JOB COST=$301.42
PROFIT=24.7%
END
```

IN August FARM CHEMICALS published a survey of custom applicators and the results reflected some "gut feeling" ways as to how some applicators set their prices for the services they perform for the farmer. More than one-third admitted that their charges were based on what their competitors were charging. Without identifying application rate or any other factor, the results produced the average data shown below.

Not bad in terms of average profit based on costs for the custom applicator's services determined after he completed his season and at the year's end. But how can the custom applicator predetermine the price, cost, and profit for each application he is called upon to quote and service? Nowadays, it's "more of a snap" to compute than most applicators realize.

Programmable calculators, or pocket computers as they are sometimes called, with specialized programs for custom applicators are now available that *automatically* compute price, costs, and profit and much more without requiring any knowledge of the complicated electronic computing methods fed into the computer by magnetic cards. All the custom applicator has to do is turn the machine on and input numbers that are applicable to the job under evaluation. When this is completed, a mere tap on the compute key is all that is required to display or print out his inputs and produce the job answers.

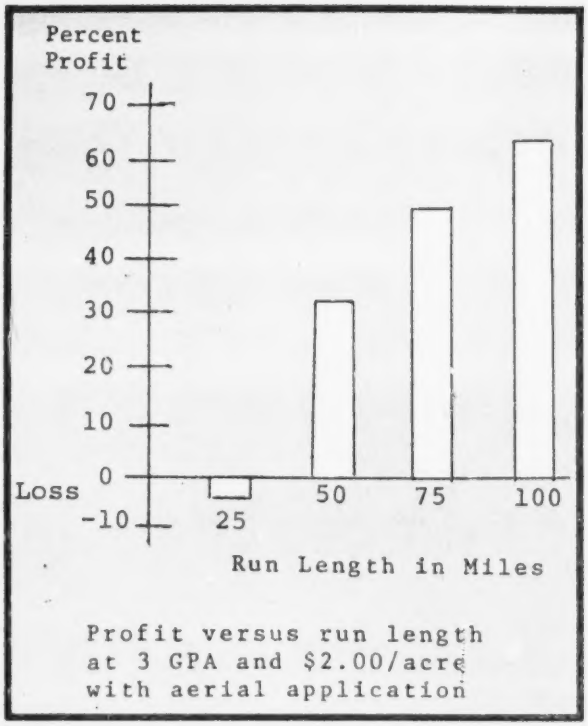
One such pocket computer was introduced by Agrinautics nearly a year ago to the airborne custom applicator. Since then, its program has been revised to fit both the air and surface custom applicator alike.

Each job the custom applicator is called upon to do or quote has different characteristics than others and these differences have a substantial impact on the job profit that can be generated. It's not hard to visualize that the cost per hour of the equipment systems used on the job may vary widely from applicator to applicator and this, combined with other widely varying job factors, determines the time and cost for performing the custom applicator service. However, what was nearly impossible to determine heretofore is now a reality. Such things as profit impact caused by operational factors such as field distance, field size, length of run, application rate in relation to the vehicle load, speed and swath width, etc. are quickly and automatically calculated by the Air/Surface Job Analysis pocket computer offered by Agrinautics.

To reveal all the factors involved in any operation, refer to the accompanying computer printout. There are thirteen factors (parameters) that inter-relate with each other to derive job answers. In the automatic computation by the computer system, eight answers are generated, each of which are important in some way to the custom applicator. In addition, the computer signals the applicator when the last swath is partial and when the job profit is negative (is a loss). The former may be very important to the applicator in selecting an optimum swath for the job and the latter requires no further amplification.

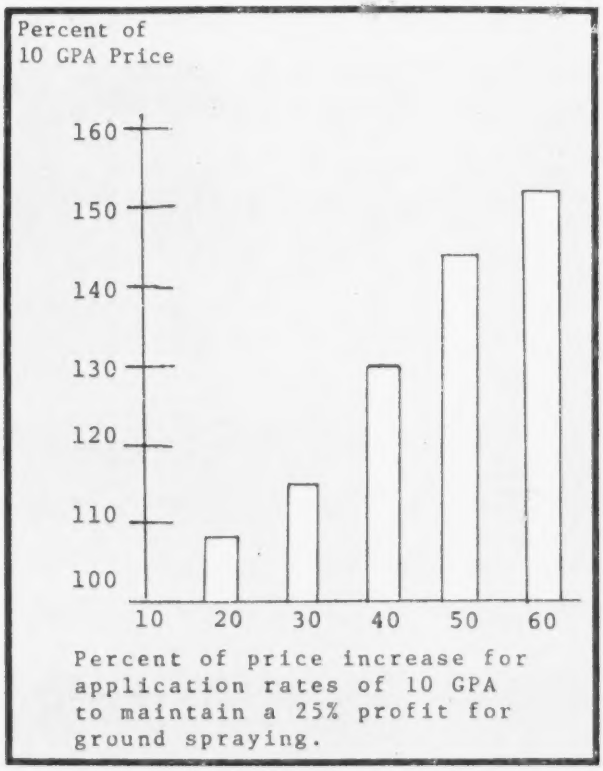
Remember, the computer user only has to punch in the numbers and the computer automatically prints out the parameter notations, together with the number entered by the user. A keyboard overlay guides the user to input the numbers for successive fac-

APPLICATION METHOD	CHARGE/ ACRE	COST/ ACRE	PROFIT/ ACRE	% PROFIT
Surface				
Herbicide	$3.90	$3.17	$ .73	23.0
Insecticide	$3.88	$3.25	$ .63	19.4
Air				
Herbicide	$3.30	$2.29	$1.01	44.1
Insecticide	$3.31	$2.44	$ .87	35.7



Profit versus run length at 3 GPA and $2.00/acre with aerial application

RUN LENGTH	% PROFIT (LOSS)
.25	- 3.5
.50	32.4
.75	50.1
1.00	61.6



Percent of price increase for application rates of 10 GPA to maintain a 25% profit for ground spraying.

tors and directs him by color coded lines to keys for starting the computations and displaying and printing the answers. The custom applicator need only hit numbers for any factor or factors he wants revised and have the computer generate new answers under the changed conditions. The user, for example, may quickly evaluate the impact on his profit for ¼, ½ or 1 mile runs, leaving all other factors the same.

The same pocket computer accepts preprogrammed magnetic cards on a host of other problem-solving requirements designed for custom applicators and small business operations. Fertilizer batch mixing and blending, pesticide mixing, employee payroll computations, employee year-ending withholding reports, etc. are just a few of the available programs from other sources that can be entered into your programmable calculator.

Most important to the ag air or surface operator, there are programs available to determine cost of operating any piece of equipment or system of equipment. However, for the purposes of this evaluation, the cost per hour of any system of equipment can be determined by totaling your entire business expenses, including direct costs, taxes, and insurance, etc., and dividing it by the number of hours of operation of those systems.

In the case of a dual business where chemicals are also sold, the businessman may allocate expenses on the same percentage as their respective sales volume or some other criteria. For example, if chemical sales are $600,000 and application sales are $400,000, then 40% of the business expenses may be allocable to the application business and 60% to the chemical sales business. This expense allocation or some other value determined by the operator may then be divided by the number of applicator system hours experienced during the same accounting period as were the expenses.

These estimates of expenses and thus cost per hour of operation of his equipment provide a good number to use in the computer analysis. However, in the final evaluation, the answers provided by the computer are more accurate than anything most operators have had to date and this in itself gives the manager substantially better information on which to make his daily operating and pricing decisions.

For those who cannot provide the cost per hour of operation of their equipment, not all is lost. You still can work the system backward by establishing your profit goal desired or profit history for average conditions in your area and computing the answers with varying cost/hour values until your profit goal is computed in the answers. That cost per hour, which obtains your profit goal, will be the cost per hour you must experience to generate the desired profit. Of course, a lesser business cost per hour will increase your profit.

Still further, custom applicators may benefit from the use of small programmable calculators by comparing varying job conditions, one at a time, such as base to field distance, swath width, application rate, field size, or any other parameter value. The impact of varying any value of a given factor can be truly seen even though the cost/hour value is inaccurate as long as it is maintained throughout the comparisons. FC

Mr. Sanders is general manager of Agrinautics, Inc., Las Vegas, NV.